

hsien, alt. 4000 ft., *E. H. Wilson*, no. 1454, Aug. 5, 1907. S h e n s i : Yen-an-fu, *Wm. Purdom*, no. 351, in 1910; Lungshow, Kuan shan, alt. 2000 m., *J. Hers*, no. 2333, July 3, 1922; Lintung, alt. 350 m., *J. Hers*, no. 3018, Oct. 28, 1924; Tsing Ling, 60 km. south of Sianfu, alt. 1000–1500 m., *J. Hers*, no. 3015, Oct. 20, 1924. S h a n s i : in valle fl. Shaho, *G. N. Potanin*, June 3, 1884 (herb. Petrop.); Tai-yuan-fu plain, Fen ho valley, alt., 800 m., *J. Hers*, no. 2702, Oct. 4, 1923; Wu chai hsien, 2000–3000 m., *Tchuang Kieh*, *Hers* no. 2022, Sept. 7, 1922. C h i l i : Peking, *J. Hers*, nos. 2255, 2256, 2257 and 2259, Oct. 18, 1922; Peking, *W. Y. Hsia*, May 3, 1926; Peking, western hills, *J. Hers*, nos. 2219 and 2227, Oct. 11, 1922; Po hua shan, *J. Hers*, no. 1651, Sept. 9, 1921; near Sun tun ying, *F. N. Meyer*, nos. 974 and 975, May 31, 1913; Huai Lai hsien, Lin shu chwang and Yang kia ping, *J. Hers*, nos. 2073 and 2080, Oct. 3 and 4, 1922; Ta han ling, *J. Hers*, no. 1642, Sept. 7, 1921; Nankow, *J. G. Jack*, Oct. 6, 1905; Kalgar, Methodist compound, *N. H. Cowdry*, no. 1441, June 6, 1921. H o n a n : Neihwang, alt. 100 m., *J. Hers*, no. 2457, Oct. 31, 1922; Min chih, alt. 580 m., *J. Hers*, no. 2523. K i a n g s u : Yas wan (on the Great Canal), *J. Hers*, nos. 624 and 625, May 2, 1921; Nanking, *K. Ling*, no. 7946, May 1925, (tree 50 ft. high, in open places).

MANCHURIA: common north of Harbin, *C. S. Sargent*, Aug. 29, 1903; Harbin, *P. V. Suizev*, Aug. 1905 (herb. Petrop.); near Harbin, *B. Skvortzov*, July 1927.

KOREA. North Heian prov.: Wijyu, *T. Nakai*, no. 1952, June 3, 1914; abundant on Yalu river around Shingishu, *E. H. Wilson*, no. 8784, July 16, 1917. South Kankyo: Hensan to On-senri, *E. H. Wilson*, no. 9343, Oct. 5, 1917.

Populus Simonii and *P. Przewalski* have been regarded up to the present by all authors as two distinct species, but an examination of the type material in the herbarium of the Botanic Garden at Leningrad convinced me that there is no specific difference between the two. The very characteristic short-petioled, obovate leaves of vegetative shoots of *P. Simonii* are also present on vegetative branches of Piasezki's specimen from Kansu collected May 26/June 7, 1875, and the leaves of mature trees of the Kansu specimens are not different from those of specimens collected near Peking which is the region from which *P. Simonii* was introduced. Fruiting specimens from both regions agree in their slender catkins and small mostly two-valved fruits. Maximowicz knew *P. Simonii* only from the description (see Bull. Soc. Nat. Moscou, LIV. 52) and one can readily understand that he did not identify this species described as having strongly angled branches and short petioled leaves 14–18

cm. long with his material from mature trees which showed terete branches and slender-petioled small leaves. These differences which are really differences between young and mature plants were emphasized by later authors as Dode and Gombocz who probably had seen little if any typical material of *P. Przewalskii*, but were well acquainted with *P. Simonii*. Also Schneider when describing his *P. suaveolens* var. *Przewalskii* had seen no material of typical *P. Przewalskii* and based his description on Potanin's specimen from "circa lacus Ubsa" which he had received from Kew under the name *P. Przewalskii*, though it is not enumerated by Maximowicz. Potanin's specimen, however, which I saw in Leningrad, is entirely different from typical *P. Przewalskii* and belongs to *P. pilosa* Rehd., though the specimen is not so distinctly and densely pilose as the type from Baga Bogdo, Altai Mountains. Also *Populus suaveolens* var. *macrocarpa* Schrenk seems nearer to *P. pilosa* than to any other species, but its fruits are glabrous.

Populus Simonii has a wide distribution; it ranges from the Kokonor region of eastern Tibet through northern China and southern Mongolia to Manchuria and northern Korea. It is chiefly characterized by normally rather small leaves, those of mature trees generally rhombic-ovate, 4–8 cm. long, acuminate, broadly cuneate at the base and borne on slender petioles 1–2.5 cm. long; the leaves of vigorous vegetative shoots and young plants are rhombic-obovate to elliptic and usually 4–8 cm. long, abruptly short-acuminate, narrowed toward the base and borne on short petioles usually 0.5–1.5 cm. long, but occasionally the leaves may be up to 15 cm. long and the petioles correspondingly longer. The shoots are more or less angled, but the branches of mature trees are terete. The fruits are rather small and 2- or partly 3-valved; they are either pubescent as described by Maximowicz or glabrous as in Piasezki's specimen from Shan dan siang (syntype); also the only fruiting specimen I have seen from near Peking has glabrous fruit. It may be assumed therefore that typical *P. Simonii* has glabrous fruit. The form with pubescent fruit may be distinguished as f. **Przewalskii** (Maxim.), f. nov., with Przewalski's specimen from Kokonor as the type.

Populus Simonii is related to *P. suaveolens* Fisch. and *P. cathayana*. The former which is geographically well separated by the Mongolian desert, is easily distinguished by somewhat larger elliptic or elliptic-ovate to elliptic-oblong or occasionally elliptic-obovate leaves, abruptly short-acuminate at the apex and more or less rounded at the base and borne on petioles generally not longer than $\frac{1}{4}$ the length of the leaf; the branches are always terete. *Populus*

cathayana, whose range is similar, differs chiefly in the larger, distinctly ovate leaves broadest below the middle, more gradually acuminate at the apex and rounded or subcordate at the base, in the petioles being up to 6 cm. long and usually about $\frac{1}{2}$ as long as the blade, or even longer and in the always terete branches.

Two forms differing in habit have been introduced into cultivation: *P. Simonii* f. *pendula* Schneider (in Sargent, Pl. Wilson. III. 22, 1916) with pendulous strongly angled branches, and *P. Simonii* f. *fastigiata* Schneider (l. c.) with ascending slightly or scarcely angled branches forming a pyramidal head.

Populus suaveolens Fischer in Allg. Gartenzeit. IX. 404 (1841); in Bull. Acad. Sci. St. Pétersb. IX. 348 (1842).—Ledebour, Fl. Ross. III. 629 (1850).—Maximowicz in Bull. Soc. Nat. Moscou, LIV. 51 (1879), quoad var. b.—Koehne, Dendr. 84 (1893), pro parte.—Schneider, Ill. Handb. Laubholz. I. 14 (1904), pro parte.—Dode in Mém. Soc. Nat. Hist. Autun, XVIII. (Extr. Monog. Populus, 61) (1905), pro parte.—Ascherson & Graebner, Syn. Mitteleur. Fl. I. 48 (1908), pro parte.—Elwes & Henry, Trees Gr. Brit. & Irel. VII. 1841 (1913), pro parte et excl. icon.—Schneider in Sargent, Pl. Wilson. III. 18 (1916), pro parte.—Rehder, Man. Cult. Trees & Shrubs, 88 (1927), pro parte.

Populus balsamifera Pallas, Fl. Ross. I. pt. I, 67, t. 41 (1784), excl. fig. B.—Non Linnaeus.

Populus pseudo-balsamifera Turczaninow in Bull. Soc. Nat. Moscou, I. 101 (1838), nom. nudum; secundum specimen orig. in Herb. Petrop.

Populus balsamifera var. 4. *intermedia* Loudon, Arb. Brit. III. 1674 (1838).

Populus balsamifera var. 5. *suaveolens* Loudon, l. c. (1838).—Wesmael in De Candolle, Prodr. XVI. pt. II. 330 (1868); in Mém. Soc. Sci. Hainaut, III. 246 (Monog. Peupliers, 66) (1869).—Dippel, Handb. Laubholz. II. 206, fig. 100 (1892).

Populus suaveolens var. β . *latifolia* Gombocz in Math. Termesz. Közl. XXX. 111 (Monog. Gen. Populi) (1908); vix Regel.

EASTERN SIBERIA. G O V . I r k u t s k : *V. Komarov*, June 14, 1902 (herb. Petrop.); near Kirenga river, *M. Tomin*, Iter ad fl. Lena et Kirenga, no. 282, July 26, 1909; locality not identified, *N. I. Kusnezov*, no. 1364, July 25, 1910 (herb. Acad. Petrop.). T r a n s - b a i c a l i a : "Dahuria" Hb. Pallas ex Herb. Fischer (Herb. Petrop.); ad ostium torrentis Utulik, *N. S. Turczaninow*, in 1835 (herb. Petrop.); Bargusina, *I. F. Krynkov*, nos. 189, 1608, July 30, 1905 (herb. Petrop.); Schilka river, *C. Maximowicz*, June 7, 1859 (herb. Petrop.); Nerchinsk, *I. M. Krascheninnikov*, nos. 1265, 1271, June 4 and 7, 1909 (herb. Petrop.); Zabaik, *V. I. Syrjanov*, nos. 3, 40, in 1908, *I. W. Nowopokrowsky*, in 1908, *I. F. Krynkov*, nos. 50, 54, June 15 and July 18, 1909, *V. N. Lipsky*, July 2, 1901, *B. Fedt-*

schenko, nos. 172, 294, in 1909, *E. F. Trofimova & V. E. Rudzinsky*, no. 411, in 1911, *Stukow*, Pl. Transbaical. (all in herb. Petrop.); locality not identified, *I. I. Yarygin*, no. 199, in 1908. Gov. Yakutsk: inter fl. Wilui (64° N. L.) et fl. Olenek (68° N. L.) *R. Maak*, in 1854 (herb. Acad. Petrop.); Burchan, Nitschatka, *G. Maydell*, June 20, 1872; localities not identified, *F. V. Sokolov*, nos. 181, 311 and 312 in 1909; "ad fl. Maja," *W. Drobow*, no. 499, July 21, 1912 (all in herb. Petrop.).

This species which by recent authors has been confused with the two Chinese Poplars discussed above from which it is well separated by morphological characters and removed geographically. It is the most northern of the Asiatic Poplars occurring as it does between 50° N. Long. and the Arctic Circle. According to the specimens seen it ranges from the former Gov. Irkutsk through Transbaicalia to the Gov. Yakutsk; farther east it is replaced by *P. Maximowiczii* Henry which is a closely related species and occurs in Kamtschatka, Saghalin, the Maritime Province, Mandschuria, Korea and Japan; it is chiefly distinguished by pubescent branchlets, larger leaves pubescent beneath, and pubescent petioles. There are, however, glabrescent forms and the two species are not always readily separated. Another closely related species *P. koreana* Rehd. occurs in northern Korea, and is chiefly distinguished by its viscid-glandular young shoots.

***Populus suaveolens* var. β . *pyramidalis* Regel, Russk. Dendr. 96 (1870); ed. 2, p. 151 (1883).**

Forest Institute at Leningrad, planted, *E. Wolf*, without date and Sept. 1928.)

This form differs from the type in its ascending branches forming a pyramidal head. The leaves on mature branches are oval or elliptic-ovate, 6–7 cm. long and 4–5 cm. broad, rounded at base and abruptly acuminate, short-pilose on the midrib above and beneath and sparingly so on the veins; the petioles are 1.5–2 cm. long and pilose. The leaves of the perfectly terete vegetative shoots are ovate-oblong up to 10 cm. long, rounded at base or elliptic-oblong and short-petioled and glabrous on both sides. The tree is staminate and the catkins are 4 cm. long; bracteoles cuneate-obovate, deeply lacinate, strigose-pilose on the back and with ciliate lobes; anthers ellipsoid, 1–1.5 mm. long, on slender filaments longer than the anthers.

***Corylus Fargesii* Schneider, Ill. Handb. Laubholzk. II. 896, fig. 561 d (1912); in Sargent, Pl. Wilson. II. 444 (1916).**

Corylus rostrata Ait. var. *Fargesii* Franchet in Jour. de Bot. XIII. 199 (1899).—H. Winkler in Engler, Pflanzenr. IV–61, p. 53, fig. 14 F (1904).

Corylus mandshurica Maxim. var. *Fargesii* Burkill in Jour. Linn. Soc. xxvi. 505 (1899).—Diels in Bot. Jahrb. xxix. 281 (1900).

CHINA. S z e c h u a n : Tchen-keou-tin, *P. Farges*, no. 1307 (holotype); Sungpan hsien, woods, *W. P. Fang*, no. 4251, Aug. 17, 1928 (tree 10 m. high.)

An examination of the type specimen of *Corylus rostrata* var. *Fargesii* convinced me that the plant, as already pointed out by Schneider (in Pl. Wilson, l. c.), is not closely related to *C. rostrata* Ait. or *C. Sieboldiana* var. *mandschurica* (Maxim.) Schneid. but more nearly to *C. chinensis* and that it possibly might be considered a variety of the latter species, from which it differs chiefly in the oblong, thin, nearly glabrous leaves, rounded to truncate or even broadly cuneate at the unequal base. The fruit in its husk and nut agrees very well with that of *C. chinensis*, while in *C. rostrata* and in *C. Sieboldiana* and its varieties the husk is more gradually contracted above the nut which is ovoid, higher than broad and has a much smaller hilum and thinner walls. The staminate catkins are arranged 3–6 in a more or less elongated raceme and the bracts of the catkins are closely and finely pubescent with a glabrescent mucro, while in *C. rostrata* and in *C. Sieboldii* var. *mandschurica* the catkins are produced in sessile clusters of 2–3 or solitary and the bracts are rather densely hairy with a long-ciliate mucro. Also the serration of the leaves of *C. Fargesii* resembles more that of *C. chinensis* with shorter and blunter teeth than that of *C. Sieboldiana* which has longer acuminate teeth. The specimens collected by Fang near Sungpan agrees exactly with Franchet's type, but the fruits had induced me to consider it, before I had seen Franchet's type, an extreme form of *C. chinensis* with much narrower leaves.

Hydrangea Chungii, sp. nov. (§. EUHYDRANGEA, ser. Petalanthae).

Frutex; rami hornotini fuscescentes dense pilis strigoso-villosis brevibus et patentibus ad 3 mm. longis vestiti, annotini epidermide soluto glabri, albido-cinerei. Folia membranacea, elliptico-oblonga, 12–20 cm. longa et 4.5–8.5 cm. lata, acuminata, basi cuneata, imo basi excepto serrato-dentata dentibus leviter vel vix sursum curvatis, supra laete viridia, satis dense pilis brevibus et longis subaccumbentibus conspersa, subtus pallidiora tota facie satis dense breviter villosopilosa et praesertim ad costam, nervos et venulas conspicue hirsuta pilis hyalinis ad 3 mm. longis, nervis utrinque 8–12 curvato-ascendentibus supra inconspicuis subtus leviter elevatis; petioli 1–4 cm. longi, hirsuti et breviter pubescentes. Cyma plana, floribus sterilibus exclusis 7–9 cm. diam., breviter pedunculata pedunculo 1–2.5 cm. longo pilis breviter et longioribus hirsutis vestita, floribus sterilibus paucis (4–7) praedita; flores steriles

quadrisepali, sepalis obovato-rotundatis in fructu 1.5–2.2 cm. longis utrinque pubescentibus integris, pedicello gracili pubescente sub fructu ad 3 cm. longo suffulta; flores fertiles (alabastra tantum visa) cyaneo-purpurascens, 5-meri; pedicelli 1–2 mm. longi ut calyx dense strigosi; calycis lobi triangulares, acuti, circiter 1 mm. longi; petala (non plane evoluta) elliptica, circ. 2 mm. longa; stamina 10; styli 3, rarius 2; ovarium semi-inferum sub anthesi tantum paullo e tubo calycis exsertum; capsula matura globosa-ovoidea, stylis erecto-patentibus exclusis circ. 2 mm. longa, ovario tubum calycis triente superans; semina ovoidea, exalata, 0.5 mm. longa.

CHINA. F u k i e n : Yenping, Fort north of Steps 3800, on slopes, alt. 230 m., *H. H. Chung*, Aug. 21, 1924 (type); Yenping, Buong Kang, in thickets, *H. H. Chung*, June 8, 1925.

This new species is apparently related to *H. Moellendorffii* Hance with which the specimens cited above have been confused. The latter species which is known only from the type specimen in the British Museum differs chiefly in the strigillose appressed pubescence of leaves and stem, the smaller shorter-petioled leaves, the smaller long- and slender-stalked inflorescence with few disepalous sterile flowers. The two species are apparently very local, *H. Moellendorffii* being known only from near Kiukiang, Kiangsi, and *H. Chungii* only from near Yenping, Fukien.

Liquidambar Styraciflua L. f. rotundiloba, forma nova.

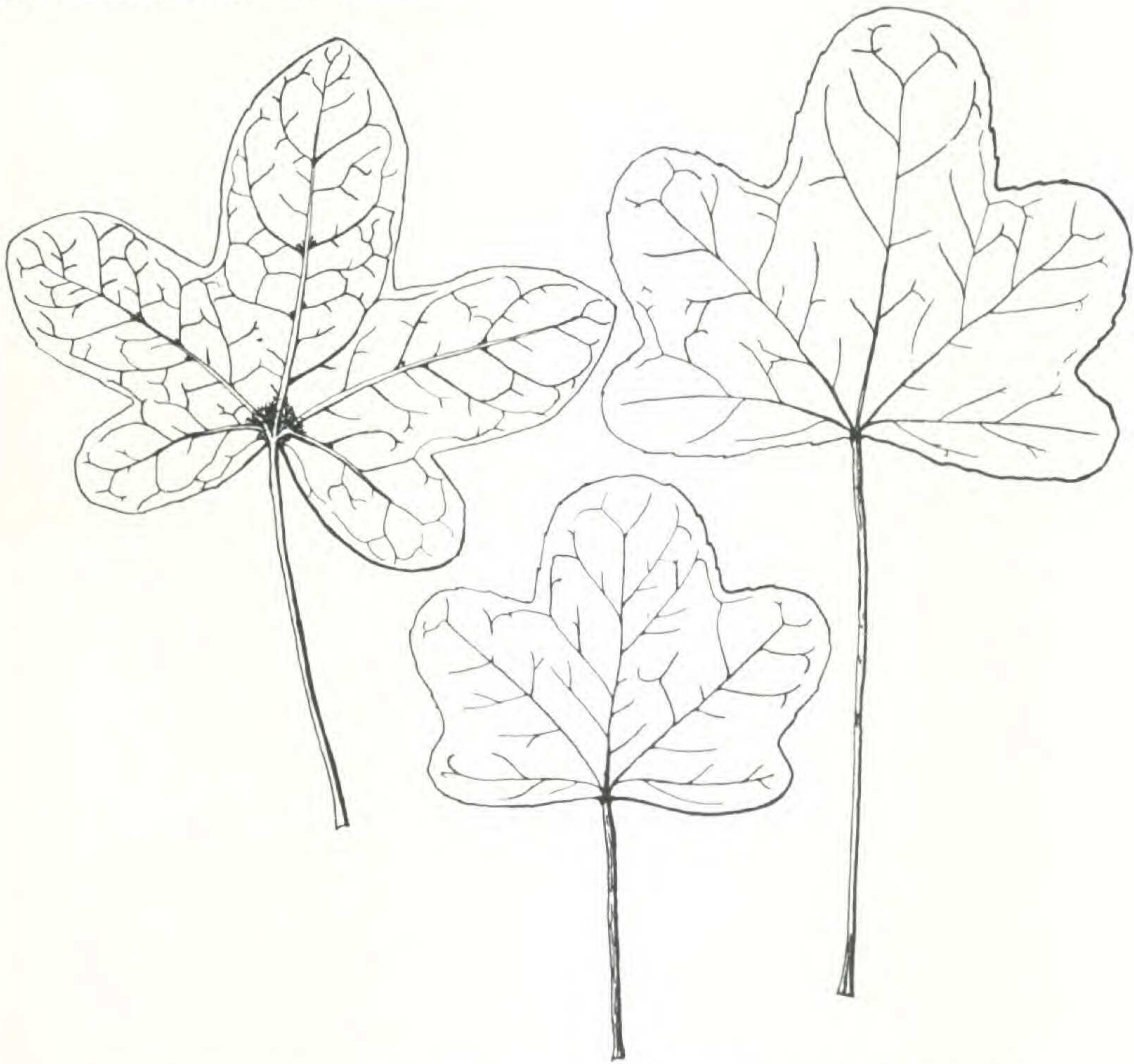
A typo recedit foliis obtusilobatis lobis rotundatis plerumque latioribus quam longis remote et saepe indistincte serrulatis.

NORTH CAROLINA: near Pinehurst, *R. E. Wicker*, September 15, 1930.

This form differs so much in its leaves from typical Sweetgum that at the first glance one would hardly recognize it as belonging to *Liquidambar*. The leaves with their broad rounded indistinctly serrulate lobes usually broader than long, rarely somewhat longer than broad, resemble more those of a Maple, than those of Sweet-gum which have acuminate sharply and rather closely serrulate lobes. The leaf variations so far known and discussed and figured by Theo. Holm¹ always show acuminate or acute lobes or on unlobed leaves an acute apex and occur either on seedlings and juvenile plants or on mature trees at the base or apex of the branchlets. They are thus of ontogenetic nature and not distinct forms of individual trees. The majority of leaves on mature trees show little variation and all the numerous specimens in this her-

¹ HOLM, THEO. Leaf-variations in *Liquidambar Styraciflua* L. (*Rhodora*, xxxii. 95–100, pl. 200, 201. 1930).

barium representing its whole range of distribution show uniformly leaves with triangular-ovate to triangular-oblong acuminate sharply serrulate lobes without any transitions to this new form with short and broad rounded lobes.



LIQUIDAMBAR STYRACIFLUA f. ROTUNDILOBA Rehd.—Leaves ($\times \frac{1}{2}$).

We owe the discovery of this interesting form to Mr. R. E. Wicker of Pinehurst, North Carolina, who kindly sent us branches from the single tree he found of this form. He states in his letter that he examined the whole tree and the shoots around it for reversion to the type, but found all the leaves uniformly of the shape described above; he also mentions that in bark and limb formation the tree differs somewhat from the typical form. He promised to send to this Arboretum branches for grafting, so that we may hope to have this interesting new form soon growing here.

Crataegus scabrifolia, comb. nov.

Pyrus scabrifolia Franchet, Pl. Delavay, 229 (1889).—Léveillé, Cat. Pl. Yun-Nan, 231 (1917).

Crataegus Henryi Dunn in Jour. Linn. Soc. xxxv. 494 (1903).—Schneider, Ill. Handb. Laubholz 1. 770, f. 435, 1-6 (1906).—Diels in Notes Bot. Gard. Edinb. vii. 236 (1912).—Sargent, Pl. Wilson, 1. 181 (1913).—Léveillé, Cat. Pl. Yun-Nan, 229 (1917).—**Synon. nov.**

CHINA. Y u n n a n : Tali (an culta?) *J. M. Delavay*, no. 3731, June 1882 (type in herb. Paris); Tali range, alt. 8-10000 ft., *G. Forrest*, nos. 4430 and 4432, May and August 1906; Mengtze, 5000-5500 ft., *A. Henry*, nos. 9426, 9426a and 9426b (tree 10-20 ft., flowers white; type of *C. Henryi*); "commun dans les vallées et coteaux á Tong-tchouan, alt. 2550 m.," *E. E. Maire*, Arnold Arb. nos. 455 and 456, about 1912 ("fl. blanches—fruits rouges utilisés pour les confitures"); Teng Yueh, versus flum. Salween, *C. Schneider*, no. 3183, Oct. 1914; openings in dense mixed and conifer forest on the hills between Sha-yang and Chu-tong, alt. 8-9000 ft., *G. Forrest*, no. 21143, April 1922 (shrub 20-30 ft.; flowers creamy white); watershed of the Black River or Papien ho between Mohei and Maokai (Mopo and Manpieh), *J. F. Rock*, no. 2927, March 21, 1922; without precise locality, *G. Forrest*, nos. 7668, 9853, 11831, 17922, 18585.

Having examined Franchet's type of *Pyrus scabrifolia* (labeled by Franchet *Pirus scabrida*) in the herbarium at Paris I find that the specimen is not a *Pyrus* of the section *Aria* as stated by Franchet, but that it is a *Crataegus* and without doubt identical with *C. Henryi* Dunn, a species apparently common in Yunnan. Franchet's specific name being the older has to replace Dunn's name.

***Pyracantha crenato-serrata*, comb. nov.**

Photinia crenato-serrata Hance in Jour. Bot. xviii. 261 (1880).—Hemsley in Jour. Bot. xxiii. 262 (1887).

Cotoneaster Pyracantha Pritzell in Bot. Jahrb. xxix. 386 (1900), in part.—Pampanini in Giorn. Nuov. Bot. xvii. 288 (1910).—Non Spach.

Pyracantha crenulata C. Schneider, Ill. Handb. Laubholzk. i. 761 (1906); ii. 1004 (1912), in part.—Wilson in Sargent, Pl. Wilson. i. 177 (1912), in part.—Non Roemer.

Pyracantha crenulata var. *yunnanensis*, M. Vilmorin apud Mottet in Rev. Hort. 1913, p. 204, t.—Meunissier in Rev. Hort. 1925, p. 572, fig. 203, pl., fig. 5.

Pyracantha Gibbsii var. *yunnanensis* A. Osborn in Garden, lxxxiii. 138, fig. (March 1919); lxxxvii. 52, fig. (1923).—A. B. Jackson in Gard. Chron. lxxv. 266, fig. 132 A (May 1919).

Pyracantha yunnanensis Chittenden in Gard. Chron. lxx. 325 (1921).—Stapf in Bot. Mag. cli. t. 9099 (1926).—**Synon. nov.**

Pyracantha Gibbsii Rehder in Jour. Arnold Arb. v. 178 (1924); Man. Cult. Trees Shrubs, 362 (1927).—Non A. B. Jackson.

CHINA. H u p e h : Ichang, *Watters*, Herb. Hance, no. 20988 (type) in herb. Brit. Mus.; Hing shan hsien, alt. 3-4000 ft., *E. H. Wilson*, Arnold Arb. Exp. no. 2984, June 1907; Fang, *E. H. Wilson*, Veitch Exped. no. 349, July 1901; Monte Triora, alt. 1950 m., *C. Silvestri*, no. 898, Sept. 1907. S h e n s i : (ex Stapf). K a n s u : near Hui hsien, *F. N. Meyer*, no. 1742, Sept. 26, 1914. S z e c h u a n : valley of Min river, Wen chuan hsien, alt. 4-6000 ft., *E. H. Wilson*, no. 2985, June and Nov. 1908; Kiang tsin district, *C. Y. Hwang*,

no. 233, May 26, 1926; Mt. Omei, *E. H. Wilson*, nos. 4871 and 4871a; Nanchuan hsien, 5-6000 ft., *W. P. Fang*, no. 1356, June 1, 1928. Y u n n a n : Yunnan fu, *C. Schneider*, nos. 44 and 85, Feb. 14 and 19, 1914; north of Yunnan fu, Shi shui tang, *C. Schneider*, no. 297, March 9, 1914; Yunnan fu, alt. 2000-2100 m., *O. Schoch*, no. 20, April 24, 1916.

Among the types which I examined in London last year was *Photinia crenato-serrata* Hance. The type specimen consists of a small flowering branch with obovate, crenate-serrulate leaves. The structure of the flowers which have 5 free styles, as already stated by Hance in the original description, excludes the species from *Photinia* and there can be no doubt that it belongs to *Pyracantha* and is identical with *P. yunnanensis* Chittenden (*P. Gibbsii* Rehd., non A. B. Jackson) which is chiefly characterized by obovate crenate-serrate leaves. This species belongs to a group of very closely related species which, though readily distinguished in their extreme forms, are more or less connected by intermediate forms. These species are *P. crenato-serrata*, *P. atalantioides* (Hance) Stapf (*P. discolor* Rehd.) and *P. crenulata* Roem. and especially its var. *Rogersiana* A. B. Jacks. (*P. Rogersiana* Bean). The geographical and taxonomic relations of these plants are treated in detail by Dr. Stapf (l. c.). I had formerly identified *P. Gibbsii* A. B. Jacks. with the form called originally *P. crenata* var. *yunnanensis*, judging from a figure of a leaf published with the original description and showing a distinct serration. This caused me to redescribe *P. Gibbsii* under the name *P. discolor* which I based on wild specimens with quite or almost entire leaves glaucescent beneath, while *P. Gibbsii* was based on cultivated specimens of which I had seen at that time no material. The difference in the serration is easily explained by the fact that Mr. Jackson's plants were young, vigorously growing, cultivated plants which are apt to produce in a species with a tendency toward serration leaves with a distinct serration, while old mature plants growing under less favorable conditions, as were probably the wild plants which yielded the specimens, are inclined to have entire leaves and at the same time are likely to be more distinctly glaucescent beneath than those of young vigorous plants, which explains why Mr. Jackson did not put stress on the latter character.

***Ilex crenata* Thbg. f. *bullata*, f. nov.**

A typo recedit foliis bullatis i. e. supra convexis et subtus concavis.—Frutex erectus ramis gracilibus erecto-patentibus initio minute puberulis. Folia ovalia vel obovato-ovalia ad oblongo-ovalia, 1.2-2.2 mm. longa et 6-10 mm. lata, apice obtusa et mucron-

ulata, supra lucida. Fructus 5–8 mm. diam., interdum in cymis 3-floris, pedunculis 2–4 mm., pedicellis circiter 3 mm. longis.

Cultivated in the Arnold Arboretum under no. 20069 (plant sent from Japan in 1919 by E. H. Wilson as *I. Mariesii*); specimens in Herb.: A. Rehder, Oct. 4, 1921 (sterile); W. H. Judd, Dec. 23, 1930 (fruiting; type).

This form agrees with typical *I. crenata* Thbg. in its habit forming an upright shrub with spreading branches, but differs in its bullate leaves. It was sent as *I. Mariesii* from Japan in 1919 by E. H. Wilson who probably found it in some Japanese nursery. It was subsequently distributed by the Arnold Arboretum under *I. Mariesii* and later as *I. crenata nummularia*, but it is not *I. crenata* var. *nummularia* Yatabe (*I. crenata* var. *Mariesii* Dallim.) which is a dwarf, very slow growing shrub with crowded suborbicular small leaves. At the Arnold Arboretum var. *bullata* has proved hardier than typical *I. crenata* and even hardier than *I. crenata* var. *microphylla* Maxim. It therefore may be recommended for trial in regions where the typical form has not proved quite hardy.

***Paliurus Hemsleyanus*, nom. nov.**

Paliurus australis Franchet in Nouv. Arch. Mus. Paris, ser. 2., v. 223, (Pl. David. i. 71) (1883).—Non Gaertn.

Paliurus orientalis Hemsley in Kew Bull. Misc. Inform. 1894, p. 387, excl. of the name-bringing synonym and Delavay's specimen cited.—Pritzl in Bot. Jahrb. xxix. 457 (1900).—Schneider, Ill. Handb. Laubholz. ii. 260, fig. 182 c. (1909).—Pampanini in Nuov. Giorn. Bot. Ital. n. ser. xvii. 425 (1910).—Schneider in Sargent, Pl. Wilson. ii. 209 (1914).—Chun, Chin. Econ. Trees, 242 (1922).—Rehder & Wilson in Jour. Arnold Arb. viii. 165 (1927).

CHINA. E a s t e r n S z e c h u a n : South Wushan, A. Henry, no. 7205 (type); same locality E. H. Wilson, Veitch. Exp. no. 634, June 1900; Taning hsien, E. H. Wilson, no. 4630, June 1910; Cheng kou ting, P. Farges. S h e n s i : "Tciuz sien," G. Giraldi, 1903. H u p e h : Fang hsien, E. H. Wilson, Veitch Exp. without no., June 1901; Ichang, E. H. Wilson, Veitch Exp. no. 105, June and Sept. 1901; without locality, A. Henry, no. 6379, and E. H. Wilson, Veitch Exp. no. 2103, May 1901. K i a n g s u : Shien chuan tze, Ching & Tso, no. 454, May 13, 1926; Hai wei, south Tshing, Ching & Tso, no. 596, May 1926; Taiping men, Tso, no. 1116, May 1926. A n h w e i : Chuchou, Herb. Univ. Nanking, no. 1701, June 26, 1920; same locality, A. N. Steward, Herb. Univ. Nanking no. 2310, June 14, 1922; Lishan, Chemen, R. C. Ching, no. 3123, Aug. 5, 1925. K w a n g t u n g : C. Ford, no. 325 (ex Hemsley). K w a n g s i : without locality, R. C. Ching, no. 7303, Sept. 3, 1928.

Hemsley when describing his *P. orientalis* basing the description chiefly on Henry's no. 7205 considered this number identical with

Paliurus australis var. *orientalis* of Franchet and raised this variety to specific rank conserving the varietal name and citing as the first specimen Delavay's plant from Yunnan, upon which Franchet based his variety. Henry's and Delavay's specimens, however, are not identical, but belong to two geographically clearly separated species with well marked characters. Hemsley's name being based on Franchet's varietal name has to remain with Delavay's specimen and the species represented by Henry's no. 7205 will have to receive a new name for which I here propose *P. Hemsleyanus*.

Paliurus lucidus Carrière in Rev. Hort. 1866, p. 380 referred by Schneider, l. c., doubtfully to this species, probably does not belong here. The name is based on a cultivated plant sent from China by E. Simon and described as a shrub less spiny than *P. aculeatus* and "surtout remarquable par ses feuilles qui sont d'un vert très luisant, comme vernies." The latter character scarcely fits *P. Hemsleyanus*, but applies to *Zizyphus jujuba* Mill. which is common around Peking from where most of the plants came which Simon introduced. No species of *Paliurus* has been found so far in Chihli.

Paliurus orientalis Hemsley in Kew Bull. Misc. Inform. 1894, p. 387, excl. of description and Henry's and Ford's specimen cited.

Paliurus australis var. *orientalis* Franchet, Pl. Delavay, 132 (1889), excl. specimen e Shensi.

Paliurus sinicus Schneider in Sargent, Pl. Wilson, II. 211 (1914); **synon. nov.**

CHINA. Y u n n a n : Ta pin tze near Tali, L. M. Delavay, no. 239, June 1883 (syntype of var. *orientalis*); Mengtze, alt. 4500–4600 ft., A. Henry, no. 9427 (holotype of *P. sinicus*) and 9427 B (paratype).

When in Paris last summer I had an opportunity to examine Franchet's *P. australis* var. *orientalis* and found that Schneider was right in saying (l. c.) that this variety is possibly identical with his *P. sinicus*. It is unfortunate that this makes it necessary to transfer to *P. sinicus* Schneid. Hemsley's combination from the species for which it has been used by all writers until now. The nomenclature of these two species would be much clearer, if we could preserve the name *P. sinicus* for this species, but *P. orientalis* Hemsl. can hardly be classed as a nomen confusum or ambiguum, since with the facts known the application of the name according to our rules of nomenclature is perfectly clear.

Tilia chinensis Maxim. f. ***investita*** (V. Engl.), comb. nov.

Tilia Baroniana var. *investita* V. Engler, Monog. Tilia, 132 (1909).

A typo recedit foliis subtus sparse vel sparsissime piloso-stellatis cinereo-viridibus, petiolis ut ramuli leviter pruinosi glabris.